

CDA

CHILLERS WITH NATURAL REFRIGERANT R744 (CO₂)

AIR CONDENSED WITH MODULATING COMPRESSORS



CDA - VERSION C (CHILLING ONLY)		CDA95CS	CDA190CS	CDA285CS
Cooling capacity @12/7°C; 35°C; 50% R.H. (100%)	KW	96.0	192.0	288.0
Total absorbed power	KW	29.0	58.0	87.0
EER (UNI 14511)		3.33	3.33	3.33
Cooling capacity on total recovery basis @12/7°C; 10/80°C	KW	131	262	393
Recovered thermal power @10/80°C	KW	164	328	492
Total absorbed power	KW	33.5	67.0	100.5
Overall COP		8.81	8.81	8.81
Efficiency class (Eurovent Standard)		A	A	A
Sound power	dB (A)	86	89	91
Dimensions [LxDxH]	mm	2255 x 1600 x 2655	2255 x 3200 x 2655	2255 x 4800 x 2655

Also available with 60 Hz power supply

HiRef S.p.A.
 Viale Spagna, 31/33
 35020 Tribano (PD) Italy
 Tel. +39 049 9588511
 Fax +39 049 9588522
 e-mail: info@hiref.it
www.hiref.it

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ITALIAN
COOLING
SOLUTIONS

CHILLERS WITH NATURAL REFRIGERANT R744 (CO₂)

AIR CONDENSED WITH MODULATING COMPRESSORS

CDA



96 - 480 kW



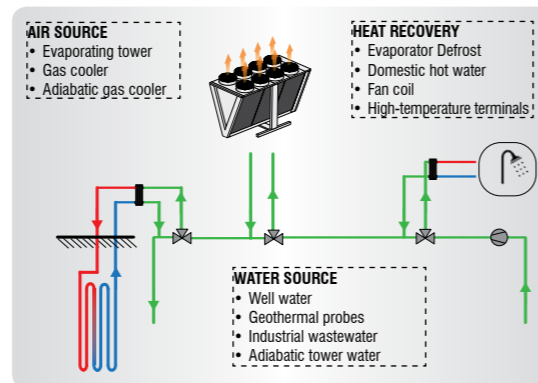
CDA

CHILLERS WITH NATURAL REFRIGERANT R744 (CO₂) AIR CONDENSED WITH MODULATING COMPRESSORS

● VERY HIGH TEMPERATURE AND MULTIPLE-SOURCE HEAT RECOVERY

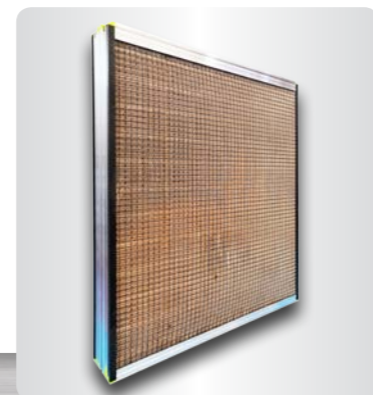
In **CDA** units, the CO₂ refrigeration cycle is transcritical, making it possible to connect several heat exchangers in series on the dissipation side. A common configuration could consist of:

- A heat exchanger for partial or total recovery of dissipation heat, allowing to produce very high temperature water (over 90°C) without altering the unit's operating conditions in any significant way. The refrigerant does not change phases so this makes large instant temperature differences possible on the water side (for example 10°C / - 80°C) and with very high efficiency levels; a common application is domestic hot water production;
- a heat exchanger with air heat sink, preferably adiabatic;
- a heat exchanger with water heat sink, with use of well water or geothermal probes. By providing additional cooling of the CO₂, the latter ensures higher refrigeration capacity and efficiency during critical periods of operation.



● ADIABATIC SATURATION SYSTEM

The adiabatic saturation system consists of a series of humidification panels placed in front of the dissipation coils and equipped with a system of nozzles that evenly wet the coils. The air flowing through these panels causes partial evaporation of the water in them and, as a result, it cools down. This brings higher efficiency of the thermodynamic cycle and increased refrigeration capacity.



● MAXIMUM EFFICIENCY WITH PARTIAL LOADS

A single refrigeration circuit with inverter-controlled compressor, standard EC (electronically commutated) fans, and variable flow management with circulation pumps are the choices that maximise the efficiency of **CDA** chillers at partial loads.

CDA is the new range of water chillers designed for applications that depend on energy efficiency and environment friendliness. **CDA** chillers offer a low environmental impact because they use CO₂ as the refrigerant fluid (R744), which has a GWP (Global Warming Potential) of 1. High efficiency/footprint ratios are attained thanks to the use of inverter-controlled compressors and finned pack heat exchangers with a large heat transfer surface area and installed in a V configuration.

The highest efficiency levels are achieved, both at partial and rated loads, through **adiabatic saturation** technology, which lowers the temperature of the air entering the coils.

● NATURAL REFRIGERANT

Refrigerant **R744** is a natural gas widely found in nature with no use restrictions. In addition, it is inert, non-toxic and, more importantly, non-flammable, all of which contribute to reducing costs and the difficulties associated with installing the systems safely.

This refrigerant can be widely used in the field of commercial refrigeration; among other things, it offers good thermodynamic performance due to its inherently favourable chemical and physical properties.

● MODULAR AND EFFICIENT

Configuration with very deep modular 'V' coils provides an extensive heat exchange surface area and therefore excellent thermal efficiency levels in relation to the unit footprint. Another particular feature is the material used for the coil tubes (copper/steel alloy) because it ensures mechanical resistance against high pressure levels (up to 130 bar) and heat exchange coefficients higher than with tubes made of only stainless steel. Single **CDA** units can be connected in parallel using special kits (on request) to achieve a modular configuration that can meet very high refrigeration capacities and guarantee high redundancy, with the system completely managed by the on-board electronics.

● UPGRADEABLE EFFICIENCY

Ejector technology (available as an option) makes it possible to flood the evaporator and increase the unit's performance by 8%.



- » EC fans provided standard (AC fans as an option)
- » Available in the versions:
 - Liquid chiller
 - Free-Cooling chiller

- » Refrigeration circuit in stainless steel AISI 316L
- » PS low pressure side: 85 bar